



Department of consumer and corporate affairs / Ministère de la consommation et des corporations



**STANDARDS BRANCH - DIRECTION DES NORMES**

**NOTICE OF APPROVAL  
AVIS D'APPROBATION**

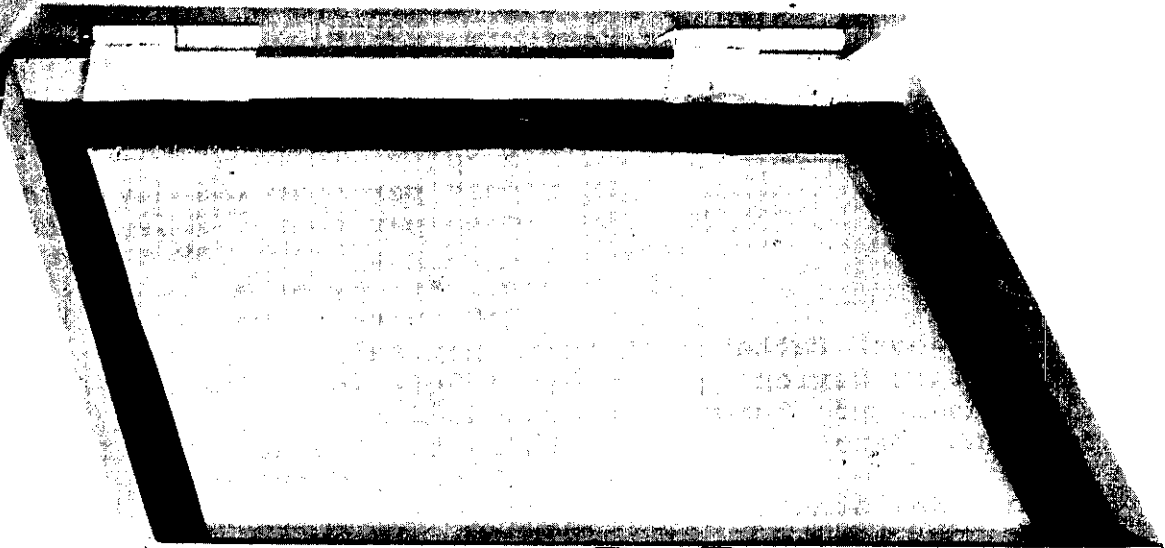
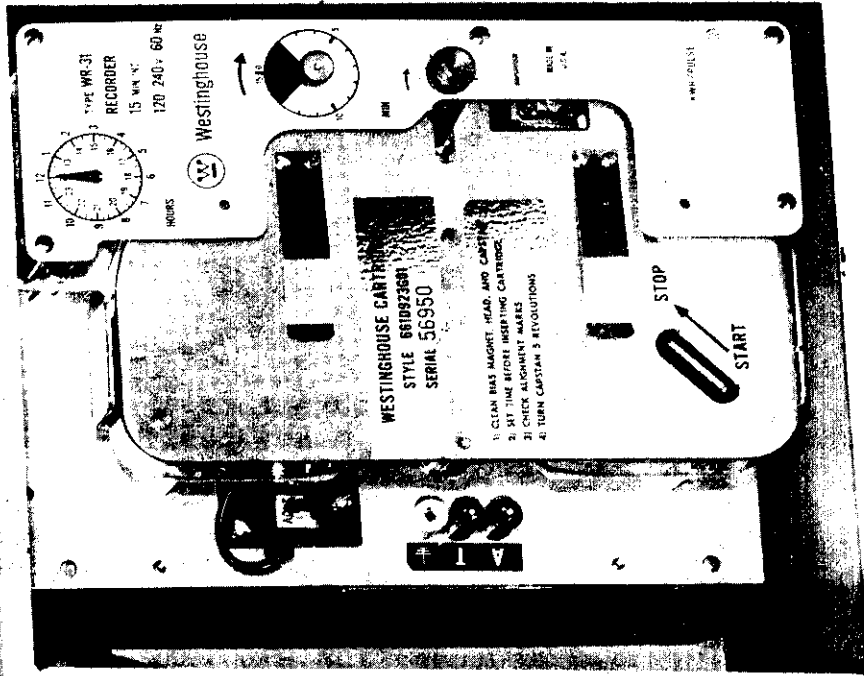
**E-132**

OTTAWA May 16, 1975

WESTINGHOUSE TYPES "WR-31A", "WR-31S" AND  
"WR-31SL" DEMAND RECORDERS (MAGNETIC TAPE)

Apparatus

Input	3-wire SPDT Contact of the Form C (break before make) positive transfer type
Max. Input Pulses	6000 pulses per hour (36 day record) 3000 pulses per hour (72 day record) 2000 pulses per hour (108 day record)
Min. Time between Pulses	0.6 seconds (36 day record) 1.2 seconds (72 day record) 1.8 seconds (108 day record)
Operating Position	Choice of four 90-degree quadrant positions. Normal vertical mounting only for 1- and 5- minute interval recorders
Data Pulse Recording	Non-Return-To-Zero
Time Pulse Recording	Extended Return-To-Bias
Tape Speed	7.00 inches per hour (36 day record) 3.50 inches per hour (72 day record) 2.33 inches per hour (108 day record)
Tape	504 feet 1 Mil Mylar $\frac{1}{4}$ inch
Power Supply	120 or 240 volts 60 Hz
External Carry-over Battery	12 volts nominal
Burden on Contact Device	2.8 va, 1.0pf. (84 volts peak half-wave)
Operating Temperature Range	-30°C to 65°C
Non tape change band	-2 minutes to +2 minutes of interval start (black band on interval dial)
Max. External Resistance	100 ohms



Description

These magnetic tape recorders are supplied in outdoor, dust resistant and weather resistant surface mounted cases which are available in three styles. They are essentially of the same concept and circuitry as the type WR-2C and WR-4C Demand Recorders covered by Approvals E-78, E-78-1, E-78-2, E-78-3 and E-78-4, with minor exceptions such as a slight modification to the cam arrangements to allow for the alternate mounting positions.

They can be operated in any of four 90° quadrant positions, except for those of 1 and 5 minute interval recorders which require the normal vertical mounting. Provision is made in the Types WR-31S and WR-31SL for securing the watthour meter in its normal operating position regardless of the position of the recorder.

The watthour meters approved in this application are D4S line of single phase and polyphase socket type meters presently approved for billing and additions to the line as they become approved. The meters must be equipped with approved type pulse initiators (3-wire SPDT Contact Device, Form C).

A 6-conductor cable is brought out through a hole in the high strength plastic cover and connects to a connector plug. The same recorder can accept either a single phase or a poly-phase meter dependent upon the application. The meter used as part of the WR-31 package is secured to the recorder case by means of two threaded inserts in the plastic meter cover which are centered in the offsets in the casting. The two knurled screws are tightened to completely seat the meter into the case.

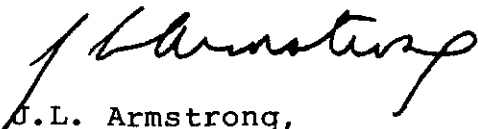
The cover of the case of Types WR-31A and WR-31S opens to the left in the recorder.

The cover of the case of Type WR-31SL opens to the right in the recorder below the meter configuration.


Detailed descriptions and the manufacturer's specifications are given in the Westinghouse Manual I.L. 42-565 WR-6.

Approval granted to:

Canadian Westinghouse Co. Ltd.,  
Hamilton, Ontario.



J.L. Armstrong,  
Chief, Standards Laboratory,



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